

## Claims

[c1] What is claimed is:

1.A multi-function projection system, comprising:  
a light source which provides a light beam;  
a color generation assembly which has at least one red,  
one green , and one blue filter to filter said light beam;  
and  
a band-cut filter which has at least one yellow beam fil-  
ter segment to selectively move into said light beam.

[c2] 2.The multi-function projection system according to  
claim 1, wherein said light source is a metal halide lamp.

[c3] 3.The multi-function projection system according to  
claim 1, wherein said light source is an ultra high pres-  
sure lamp.

[c4] 4. The multi-function projection system according to  
claim 1, wherein a transmissivity position of cut out of  
said green filter is larger or equal to 578nm wavelength.

[c5] 5.The multi-function projection system according to  
claim 1, wherein a 50% transmissivity position of cut out  
of said green filter is larger or equal to 578nm wave-  
length.

- [c6] 6.The multi-function projection system according to claim 1, wherein a transmissivity position of cut in of said red filter is less or equal to 578nm wavelength.
- [c7] 7.The multi-function projection system according to claim 1, wherein a 50% transmissivity position of cut in of said red filter is less or equal to 578nm wavelength.
- [c8] 8.The multi-function projection system according to claim 1, wherein a filtering wavelength of said yellow beam filter of said band-cut filter is limited around 578nm wavelength.
- [c9] 9.The multi-function projection system according to claim 1, wherein said band-cut filter has a driver.
- [c10] 10.The multi-function projection system according to claim 9, wherein said driver is manual.
- [c11] 11. The multi-function projection system according to claim 9, wherein said driver is a motor.
- [c12] 12.The multi-function projection system according to claim 1, wherein frequency of moving said band-cut filter into a light path is synchronized to said red filter to filter the yellow beam within the red beam.
- [c13] 13.The multi-function projection system according to

claim 1, wherein frequency of moving said band-cut filter into the light path is synchronized to said green filter to filter the yellow beam within the green beam.

- [c14] 14.The multi-function projection system according to claim 1, wherein frequency of moving said band-cut filter into the light path is synchronized to said red and green filter to filter the yellow beam within the red and green beam.
- [c15] 15.The multi-function projection system according to claim 1, wherein said band-cut filter keeps out of the light path of said light beam.
- [c16] 16.The multi-function projection system according to claim 1, wherein said projection system further comprises a screen to receive said beam of said light source, said band-cut filter being placed between said light source and said screen.
- [c17] 17.The multi-function projection system according to claim 1, wherein said projection system further comprises an integration rod after said color generation assembly, said band-cut filter being placed between said color generation assembly and said integration rod.
- [c18] 18.The multi-function projection system according to claim 1, wherein said band-cut filter is a color wheel

form which has at least one yellow filter segment and the other is transparent segment.

- [c19] 19.The multi-function projection system according to claim 18, wherein said transparent segment can coat an anti-reflection.
- [c20] 20.The multi-function projection system according to claim 1, wherein said band-cut filter is a long plank upon which has at least one yellow filter segment.